



*An initiative of the ABIM Foundation*

American Academy of Allergy, Asthma & Immunology



## Five Things Physicians and Patients Should Question

### 1 Don't perform unproven diagnostic tests, such as immunoglobulin G (IgG) testing or an indiscriminate battery of immunoglobulin E (IgE) tests, in the evaluation of allergy.

Appropriate diagnosis and treatment of allergies requires specific IgE testing (either skin or blood tests) based on the patient's clinical history. The use of other tests or methods to diagnose allergies is unproven and can lead to inappropriate diagnosis and treatment. Appropriate diagnosis and treatment is both cost effective and essential for optimal patient care.

### 2 Don't order sinus computed tomography (CT) or indiscriminately prescribe antibiotics for uncomplicated acute rhinosinusitis.

Viral infections cause the majority of acute rhinosinusitis and only 0.5 percent to 2 percent progress to bacterial infections. Most acute rhinosinusitis resolves without treatment in two weeks. Uncomplicated acute rhinosinusitis is generally diagnosed clinically and does not require a sinus CT scan or other imaging. Antibiotics are not recommended for patients with uncomplicated acute rhinosinusitis who have mild illness and assurance of follow-up. If a decision is made to treat, amoxicillin should be first-line antibiotic treatment for most acute rhinosinusitis.

### 3 Don't routinely do diagnostic testing in patients with chronic urticaria.

In the overwhelming majority of patients with chronic urticaria, a definite etiology is not identified. Limited laboratory testing may be warranted to exclude underlying causes. Targeted laboratory testing based on clinical suspicion is appropriate. Routine extensive testing is neither cost effective nor associated with improved clinical outcomes. Skin or serum-specific IgE testing for inhalants or foods is not indicated, unless there is a clear history implicating an allergen as a provoking or perpetuating factor for urticaria.

### 4 Don't recommend replacement immunoglobulin therapy for recurrent infections unless impaired antibody responses to vaccines are demonstrated.

Immunoglobulin (gammaglobulin) replacement is expensive and does not improve outcomes unless there is impairment of antigen-specific IgG antibody responses to vaccine immunizations or natural infections. Low levels of immunoglobulins (isotypes or subclasses), without impaired antigen-specific IgG antibody responses, do not indicate a need for immunoglobulin replacement therapy. Exceptions include IgG levels <150mg/dl and genetically defined/suspected disorders. Measurement of IgG subclasses is not routinely useful in determining the need for immunoglobulin therapy. Selective IgA deficiency is not an indication for administration of immunoglobulin.

### 5 Don't diagnose or manage asthma without spirometry.

Clinicians often rely solely upon symptoms when diagnosing and managing asthma, but these symptoms may be misleading and be from alternate causes. Therefore spirometry is essential to confirm the diagnosis in those patients who can perform this procedure. Recent guidelines highlight spirometry's value in stratifying disease severity and monitoring control. History and physical exam alone may over- or under-estimate asthma control. Beyond the increased costs of care, repercussions of misdiagnosing asthma include delaying a correct diagnosis and treatment.

## How This List Was Created

The American Academy of Allergy, Asthma & Immunology (AAAAI) Executive Committee created a task force to lead work on *Choosing Wisely* consisting of board members, the AAAAI President and Secretary/Treasurer and AAAAI participants in the Joint Task Force on Practice Parameters. Through multiple society publications and notifications, AAAAI members were invited to offer feedback and recommend elements to be included in the list. A targeted email was also sent to an extended group of AAAAI leadership inviting them to participate.

The work group reviewed the submissions to ensure the best science in the specialty was included. Based on this additional members were recruited for their expertise. Suggested elements were considered for appropriateness, relevance to the core of the specialty, potential overuse of resources and opportunities to improve patient care. They were further refined to maximize impact and eliminate overlap, and then ranked in order of potential importance both for the specialty and for the public. Finally, the work group chose its top five recommendations which were then approved by the Executive Committee. AAAAI's disclosure and conflict of interest policy can be found at [www.aaaai.org](http://www.aaaai.org).

## Sources

1. Cox L, Williams PB, Sicherer S, et al. Pearls and pitfalls of allergy diagnostic testing: report from the American College of Allergy, Asthma and Immunology/ American Academy of Allergy, Asthma & Immunology Specific IgE Test Task Force. *Ann All Asthma Immunol*. 2008;101:580-92.
1. Bernstein I, Li J, Bernstein D et al. Allergy diagnostic testing: an updated practice parameter. *Ann All Asthma Immunol* 2008;100:s1-148.
1. Terr AL. Unconventional theories and unproven methods in allergy. In: *Allergy Principles and Practice*, 7th Ed, 97:1691-1709.
2. Ahovuo-Saloranta A, Borisenko OV, Kovanen N, et al. Antibiotics for acute maxillary sinusitis. Cochrane database of systematic reviews 2008:CD000243.
2. American College of Radiology ACR Appropriateness Criteria® for Sinonasal Disease, 2009 [http://www.acr.org/SecondaryMainMenuCategories/quality\\_safety/app\\_criteria/pdf/ExpertPanelNeurologicImaging/SinonasalDisease.aspx](http://www.acr.org/SecondaryMainMenuCategories/quality_safety/app_criteria/pdf/ExpertPanelNeurologicImaging/SinonasalDisease.aspx); 2009.
2. Wanderer, AA, Bernstein, IL, Goodman, DL, et al. The Diagnosis and Management of Urticaria: a Practice Parameter. *Ann Allergy Asthma Immunol* 2000;85:521-44.
2. Tarbox JA, Gutta RC, Ching EL, Radojicic C, Lang DM. Utility of routine laboratory testing in management of chronic urticaria/angioedema. *Ann Allergy Asthma Immunol* 2011, 107: 239-43.
2. Bernstein IL, Li, JT, Bernstein DI et al. Allergy diagnostic testing: an updated practice parameter. *Ann Allergy Asthma Immunol*. 2008 Mar;100(3 Suppl 3):S1-148.
2. Kozel MM, Bossuyt PM, Mekkes JR, Bos JD. Laboratory tests and identified diagnoses in patients with physical and chronic urticaria and angioedema: A systematic review. *J Am Acad Dermatol*. 2003 Mar;48(3):409-16.
3. Orange, JS et al. Use of intravenous immunoglobulin in human disease: a review of evidence by members of the Primary Immunodeficiency Committee of the American Academy of Allergy, Asthma and Immunology. *JACI* 117:S525-S553, 2006.
3. Ballou, M. "Immunoglobulin Therapy: Replacement and Immunomodulation" in *Clinical Immunology*, Third Edition Rich RR (Editor), Chapter 85, pp. 1265-1280, 2008.
3. Stiehm ER, Orange JS, Ballou M, Lehman H. Therapeutic use of immunoglobulins. *Adv Pediatr* 2010;57:185-218.
3. Bonilla FA, Bernstein IL, Khan DA, Ballas ZK, Chinen J, Frank MM, et al. Practice parameter for the diagnosis and management of primary immunodeficiency. *Annals of Allergy, Asthma & Immunology*. 2005;94(Suppl 1):S1-S63.
4. National Asthma Education and Prevention Expert Panel Report 3: Guidelines for the diagnosis and Management of Asthma. NIH Publication Number 08-5846 October 2007.
4. Li J, Oppenheimer J, Bernstein IL et al. Attaining asthma control. A practice parameter. *J Allergy Clin Immunol*. 2005;115:S3-11.
4. Global strategy for asthma management and prevention: GINA executive summary *Eur Respir J* 2008 31:143-178.
4. Fuhlbrigge A, Kitch B, Paliet D et. al. FEV1 is associated with risk of asthma attacks in a pediatric population. *J Allergy Clin Immunol*. 2001;107:61-6.
4. Magadle R The Risk of Hospitalization and Near-Fatal and Fatal Asthma in Relation to the Perception of Dyspnea *Chest*. 2002;121:329-333.
- 5.

### About the ABIM Foundation:

The mission of the ABIM Foundation is to advance medical professionalism to improve the health care system. We achieve this by collaborating with physicians and physician leaders, medical trainees, health care delivery systems, payers, policymakers, consumer organizations and patients to foster a shared understanding of professionalism and how they can adopt the tenets of professionalism in practice.



To learn more about the ABIM Foundation, visit [www.abimfoundation.org](http://www.abimfoundation.org).

### About the American Academy of Allergy, Asthma & Immunology

The American Academy of Allergy, Asthma & Immunology (AAAAI) represents allergists, asthma specialists, clinical immunologists, allied health professionals, and others with a special interest in the research and treatment of allergic and immunologic diseases. Established in 1943, the AAAAI has more than 6,500 members in the United States, Canada, and 60 other countries.



For more information or questions, please visit [www.aaaai.org](http://www.aaaai.org).

For more information or to see other lists of Five Things Physicians and Patients Should Question, visit [www.choosingwisely.org](http://www.choosingwisely.org).



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## American Academy of Family Physicians



### Five Things Physicians and Patients Should Question

1

#### **Don't do imaging for low back pain within the first six weeks, unless red flags are present.**

Red flags include, but are not limited to, severe or progressive neurological deficits or when serious underlying conditions such as osteomyelitis are suspected. Imaging of the lower spine before six weeks does not improve outcomes, but does increase costs. Low back pain is the fifth most common reason for all physician visits.

2

#### **Don't routinely prescribe antibiotics for acute mild-to-moderate sinusitis unless symptoms last for seven or more days, or symptoms worsen after initial clinical improvement.**

Symptoms must include discolored nasal secretions and facial or dental tenderness when touched. Most sinusitis in the ambulatory setting is due to a viral infection that will resolve on its own. Despite consistent recommendations to the contrary, antibiotics are prescribed in more than 80 percent of outpatient visits for acute sinusitis. Sinusitis accounts for 16 million office visits and \$5.8 billion in annual health care costs.

3

#### **Don't use dual-energy x-ray absorptiometry (DEXA) screening for osteoporosis in women younger than 65 or men younger than 70 with no risk factors.**

DEXA is not cost effective in younger, low-risk patients, but is cost effective in older patients.

4

#### **Don't order annual electrocardiograms (EKGs) or any other cardiac screening for low-risk patients without symptoms.**

There is little evidence that detection of coronary artery stenosis in asymptomatic patients at low risk for coronary heart disease improves health outcomes. False-positive tests are likely to lead to harm through unnecessary invasive procedures, over-treatment and misdiagnosis. Potential harms of this routine annual screening exceed the potential benefit.

5

#### **Don't perform Pap smears on women younger than 21 or who have had a hysterectomy for non-cancer disease.**

Most observed abnormalities in adolescents regress spontaneously, therefore Pap smears for this age group can lead to unnecessary anxiety, additional testing and cost. Pap smears are not helpful in women after hysterectomy (for non-cancer disease) and there is little evidence for improved outcomes.

## How This List Was Created

The American Academy of Family Physicians (AAFP) list is an endorsement of the five recommendations for Family Medicine previously proposed by the National Physicians Alliance (NPA) and published in the *Archives of Internal Medicine*, as part of its Less is More™ series. The goal was to identify items common in primary care practice, strongly supported by the evidence and literature, that would lead to significant health benefits, reduce risks and harm and reduce costs. A working group was assembled for each of the three primary care specialties; family medicine, pediatrics and internal medicine. The original list was developed using a modification of the nominal group process, with online voting. The literature was then searched to provide supporting evidence or refute the activities. The list was modified and a second round of field testing was conducted. The field testing with family physicians showed support for the final recommendations, the potential positive impact on quality and cost and the ease with which the recommendations could be implemented.

AAFP's disclosure and conflict of interest policy can be found at [www.aafp.org](http://www.aafp.org).

6 More detail on the study and methodology can be found in the *Archives of Internal Medicine* article: [The "Top 5" Lists in Primary Care](#).

## Sources

- 1 Agency for Health Care Research and Policy (AHCPR), Cochrane Reviews.
- 2 Center for Disease Control and Prevention (CDC), Cochrane, and Annals of Internal Medicine.
- 3 U.S. Preventive Services Task Force (USPSTF), American Association of Clinical Endocrinology (AACE), American College of Preventive Medicine (ACPM), National Osteoporosis Foundation (NOF).
- 4 U.S. Preventive Services Task Force (USPSTF).
- 5 U.S. Preventive Services Task Force (USPSTF) (for hysterectomy), American College of Obstetrics and Gynecology (ACOG) (for age).
- 6 "Top 5" Lists in Primary Care, Arch Intern Med. 2011;171(15):1385-1390. (c)2011 American Medical Association.

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### About the American Academy of Family Physicians:

Founded in 1947, the American Academy of Family Physicians (AAFP) represents 100,300 physicians and medical students nationwide. It is the only medical society devoted solely to primary care.



Approximately one in four of all doctor's office visits are made to family physicians. Family medicine's cornerstone is an ongoing, personal patient-physician relationship focused on integrated care.

For information about health care, health conditions, and wellness, please visit the AAFP's award-winning consumer website, [familydoctor.org](http://familydoctor.org).

For more information or to see other lists of Five Things Physicians and Patients Should Question, visit [www.choosingwisely.org](http://www.choosingwisely.org).



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American College of Cardiology



## Five Things Physicians and Patients Should Question

1

### **Don't perform stress cardiac imaging or advanced non-invasive imaging in the initial evaluation of patients without cardiac symptoms unless high-risk markers are present.**

Asymptomatic, low-risk patients account for up to 45 percent of unnecessary "screening." Testing should be performed only when the following findings are present: diabetes in patients older than 40-years-old; peripheral arterial disease; or greater than 2 percent yearly risk for coronary heart disease events.

2

### **Don't perform annual stress cardiac imaging or advanced non-invasive imaging as part of routine follow-up in asymptomatic patients.**

Performing stress cardiac imaging or advanced non-invasive imaging in patients without symptoms on a serial or scheduled pattern (e.g., every one to two years or at a heart procedure anniversary) rarely results in any meaningful change in patient management. This practice may, in fact, lead to unnecessary invasive procedures and excess radiation exposure without any proven impact on patients' outcomes. An exception to this rule would be for patients more than five years after a bypass operation.

3

### **Don't perform stress cardiac imaging or advanced non-invasive imaging as a pre-operative assessment in patients scheduled to undergo low-risk non-cardiac surgery.**

Non-invasive testing is not useful for patients undergoing low-risk non-cardiac surgery (e.g., cataract removal). These types of tests do not change the patient's clinical management or outcomes and will result in increased costs.

4

### **Don't perform echocardiography as routine follow-up for mild, asymptomatic native valve disease in adult patients with no change in signs or symptoms.**

Patients with native valve disease usually have years without symptoms before the onset of deterioration. An echocardiogram is not recommended yearly unless there is a change in clinical status.

5

### **Don't perform stenting of non-culprit lesions during percutaneous coronary intervention (PCI) for uncomplicated hemodynamically stable ST-segment elevation myocardial infarction (STEMI).**

Stent placement in a noninfarct artery during primary PCI for STEMI in a hemodynamically stable patient may lead to increased mortality and complications. While potentially beneficial in patients with hemodynamic compromise, intervention beyond the culprit lesion during primary PCI has not demonstrated benefit in clinical trials to date.



## How This List Was Created

The American College of Cardiology (ACC) asked its standing clinical councils to recommend between three and five procedures that should not be performed or should be performed more rarely and only in specific circumstances. ACC staff took the councils' recommendations and compared them to the ACC's existing appropriate use criteria (AUC) and guidelines, choosing items for the five things list that had the tightest inappropriate score in the AUCs and were Class III recommendations in the guidelines. The ACC's Advocacy Steering Committee and Clinical Quality Committee each then reviewed the five items before sending it to the ACC Executive Committee for final review and approval. ACC's disclosure and conflict of interest policy can be found at <http://www.cardiosource.org/RWI>.

## Sources

1. Hendel RC, Berman DS, Di Carli MF, Heidenreich PA, Henkin RE, Pellikka PA, Pohost GM, Williams KA. ACCF/ASNC/ACR/AHA/ASE/SCCT/SCMR/SNM 2009 appropriate use criteria for cardiac radionuclide imaging: a report of the American College of Cardiology Foundation Appropriate Use Criteria Task Force, the American Society of Nuclear Cardiology, the American College of Radiology, the American Heart Association, the American Society of Echocardiography, the Society of Cardiovascular Computed Tomography, the Society for Cardiovascular Magnetic Resonance, and the Society of Nuclear Medicine. *J Am Coll Cardiol* 2009;53:2201-29.
- Taylor AJ, Cerqueira M, Hodgson JM, Mark D, Min J, O'Gara P, Rubin GD. ACCF/SCCT/ACR/AHA/ASE/ASNC/SCAI/SCMR 2010 appropriate use criteria for cardiac computed tomography: a report of the American College of Cardiology Foundation Appropriate Use Criteria Task Force, the Society of Cardiovascular Computed Tomography, the American College of Radiology, the American Heart Association, the American Society of Echocardiography, the American Society of Nuclear Cardiology, the Society for Cardiovascular Angiography and Interventions, and the Society for Cardiovascular Magnetic Resonance. *J Am Coll Cardiol* 2010;56:1864-94.
- Douglas PS, Garcia MJ, Haines DE, Lai WW, Manning WJ, Patel AR, Picard MH, Polk DM, Ragosta M, Ward RP, Weiner RB. ACCF/ASE/AHA/ASNC/HFSA/HRS/SCAI/SCCM/SCCT/SCMR 2011 Appropriate Use Criteria for Echocardiography. A Report of the American College of Cardiology Foundation Appropriate Use Criteria Task Force, American Society of Echocardiography, American Heart Association, American Society of Nuclear Cardiology, Heart Failure Society of America, Heart Rhythm Society, Society for Cardiovascular Angiography and Interventions, Society of Critical Care Medicine, Society of Cardiovascular Computed Tomography, and Society for Cardiovascular Magnetic Resonance Endorsed by the American College of Chest Physicians. *J Am Coll Cardiol*. 2011 Mar 1;57(9):1126-66.
- Hendel RC, Abbott BG, Bateman TM, et al. Role of radionuclide myocardial perfusion imaging for asymptomatic individuals. *J Nucl Cardiol*. 2011;18:3-15.
2. Hendel RC, Berman DS, Di Carli MF, Heidenreich PA, Henkin RE, Pellikka PA, Pohost GM, Williams KA. ACCF/ASNC/ACR/AHA/ASE/SCCT/SCMR/SNM 2009 appropriate use criteria for cardiac radionuclide imaging: a report of the American College of Cardiology Foundation Appropriate Use Criteria Task Force, the American Society of Nuclear Cardiology, the American College of Radiology, the American Heart Association, the American Society of Echocardiography, the Society of Cardiovascular Computed Tomography, the Society for Cardiovascular Magnetic Resonance, and the Society of Nuclear Medicine. *J Am Coll Cardiol* 2009;53:2201-29.
- Taylor AJ, Cerqueira M, Hodgson JM, Mark D, Min J, O'Gara P, Rubin GD. ACCF/SCCT/ACR/AHA/ASE/ASNC/SCAI/SCMR 2010 appropriate use criteria for cardiac computed tomography: a report of the American College of Cardiology Foundation Appropriate Use Criteria Task Force, the Society of Cardiovascular Computed Tomography, the American College of Radiology, the American Heart Association, the American Society of Echocardiography, the American Society of Nuclear Cardiology, the Society for Cardiovascular Angiography and Interventions, and the Society for Cardiovascular Magnetic Resonance. *J Am Coll Cardiol* 2010;56:1864-94.
- Douglas PS, Garcia MJ, Haines DE, Lai WW, Manning WJ, Patel AR, Picard MH, Polk DM, Ragosta M, Ward RP, Weiner RB. ACCF/ASE/AHA/ASNC/HFSA/HRS/SCAI/SCCM/SCCT/SCMR 2011 Appropriate Use Criteria for Echocardiography. A Report of the American College of Cardiology Foundation Appropriate Use Criteria Task Force, American Society of Echocardiography, American Heart Association, American Society of Nuclear Cardiology, Heart Failure Society of America, Heart Rhythm Society, Society for Cardiovascular Angiography and Interventions, Society of Critical Care Medicine, Society of Cardiovascular Computed Tomography, and Society for Cardiovascular Magnetic Resonance Endorsed by the American College of Chest Physicians. *J Am Coll Cardiol*. 2011 Mar 1;57(9):1126-66.
3. Hendel RC, Berman DS, Di Carli MF, Heidenreich PA, Henkin RE, Pellikka PA, Pohost GM, Williams KA. ACCF/ASNC/ACR/AHA/ASE/SCCT/SCMR/SNM 2009 appropriate use criteria for cardiac radionuclide imaging: a report of the American College of Cardiology Foundation Appropriate Use Criteria Task Force, the American Society of Nuclear Cardiology, the American College of Radiology, the American Heart Association, the American Society of Echocardiography, the Society of Cardiovascular Computed Tomography, the Society for Cardiovascular Magnetic Resonance, and the Society of Nuclear Medicine. *J Am Coll Cardiol* 2009;53:2201-29.
- Taylor AJ, Cerqueira M, Hodgson JM, Mark D, Min J, O'Gara P, Rubin GD. ACCF/SCCT/ACR/AHA/ASE/ASNC/SCAI/SCMR 2010 appropriate use criteria for cardiac computed tomography: a report of the American College of Cardiology Foundation Appropriate Use Criteria Task Force, the Society of Cardiovascular Computed Tomography, the American College of Radiology, the American Heart Association, the American Society of Echocardiography, the American Society of Nuclear Cardiology, the Society for Cardiovascular Angiography and Interventions, and the Society for Cardiovascular Magnetic Resonance. *J Am Coll Cardiol* 2010;56:1864-94.
- Douglas PS, Garcia MJ, Haines DE, Lai WW, Manning WJ, Patel AR, Picard MH, Polk DM, Ragosta M, Ward RP, Weiner RB. ACCF/ASE/AHA/ASNC/HFSA/HRS/SCAI/SCCM/SCCT/SCMR 2011 Appropriate Use Criteria for Echocardiography. A Report of the American College of Cardiology Foundation Appropriate Use Criteria Task Force, American Society of Echocardiography, American Heart Association, American Society of Nuclear Cardiology, Heart Failure Society of America, Heart Rhythm Society, Society for Cardiovascular Angiography and Interventions, Society of Critical Care Medicine, Society of Cardiovascular Computed Tomography, and Society for Cardiovascular Magnetic Resonance Endorsed by the American College of Chest Physicians. *J Am Coll Cardiol*. 2011 Mar 1;57(9):1126-66.
- Fleisher LA, Beckman JA, Brown KA, Calkins H, Chaikof EL, Fleischmann KE, Freeman WK, Froehlich JB, Kasper EK, Kersten JR, Riegel B, Robb JF. ACC/AHA 2007 guidelines on perioperative cardiovascular evaluation and care for noncardiac surgery: a report of the American College of Cardiology/American Heart Association Task force on Practice Guidelines (Writing Committee to Revise the 2002 Guidelines on Perioperative Cardiovascular Evaluation for Noncardiac Surgery). *J Am Coll Cardiol* 2007;50:e159-242.
4. Douglas PS, Garcia MJ, Haines DE, Lai WW, Manning WJ, Patel AR, Picard MH, Polk DM, Ragosta M, Ward RP, Weiner RB. ACCF/ASE/AHA/ASNC/HFSA/HRS/SCAI/SCCM/SCCT/SCMR 2011 Appropriate Use Criteria for Echocardiography. A Report of the American College of Cardiology Foundation Appropriate Use Criteria Task Force, American Society of Echocardiography, American Heart Association, American Society of Nuclear Cardiology, Heart Failure Society of America, Heart Rhythm Society, Society for Cardiovascular Angiography and Interventions, Society of Critical Care Medicine, Society of Cardiovascular Computed Tomography, and Society for Cardiovascular Magnetic Resonance Endorsed by the American College of Chest Physicians. *J Am Coll Cardiol*. 2011 Mar 1;57(9):1126-66.
5. Patel MR, Dehmer GJ, Hirshfeld JW, Smith PK, Spertus JA. ACCF/SCAI/STS/AATS/AHA/ASNC 2009 Appropriateness Criteria for Coronary Revascularization: a report by the American College of Cardiology Foundation Appropriateness Criteria Task Force, Society for Cardiovascular Angiography and Interventions, Society of Thoracic Surgeons, American Association for Thoracic Surgery, American Heart Association, and the American Society of Nuclear Cardiology Endorsed by the American Society of Echocardiography, the Heart Failure Society of America, and the Society of Cardiovascular Computed Tomography. *J Am Coll Cardiol*. 2009 Feb 10;53(6):530-53.

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### About the American College of Cardiology:

The American College of Cardiology (ACC) is a 40,000-member nonprofit medical society comprised of physicians, surgeons, nurses, physician assistants, pharmacists and practice managers, and bestows credentials upon cardiovascular specialists who meet its stringent qualifications. The College is a leader in the formulation of health policy, standards and guidelines, and cardiovascular research. The ACC provides professional education and operates national registries for the measurement and improvement of quality care.



Learn more at [www.cardiosource.org/ACC](http://www.cardiosource.org/ACC).

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# American College of Physicians

## Five Things Physicians and Patients Should Question

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1

### **Don't obtain screening exercise electrocardiogram testing in individuals who are asymptomatic and at low risk for coronary heart disease.**

In asymptomatic individuals at low risk for coronary heart disease (10-year risk <10%) screening for coronary heart disease with exercise electrocardiography does not improve patient outcomes.

2

### **Don't obtain imaging studies in patients with non-specific low back pain.**

In patients with back pain that cannot be attributed to a specific disease or spinal abnormality following a history and physical examination (e.g., non-specific low back pain), imaging with plain radiography, computed tomography (CT) scan, or magnetic resonance imaging (MRI) does not improve patient outcomes.

3

### **In the evaluation of simple syncope and a normal neurological examination, don't obtain brain imaging studies (CT or MRI).**

In patients with witnessed syncope but with no suggestion of seizure and no report of other neurologic symptoms or signs, the likelihood of a central nervous system (CNS) cause of the event is extremely low and patient outcomes are not improved with brain imaging studies.

4

### **In patients with low pretest probability of venous thromboembolism (VTE), obtain a high-sensitive D-dimer measurement as the initial diagnostic test; don't obtain imaging studies as the initial diagnostic test.**

In patients with low pretest probability of VTE as defined by the Wells prediction rules, a negative high-sensitivity D-dimer measurement effectively excludes VTE and the need for further imaging studies.

5

### **Don't obtain preoperative chest radiography in the absence of a clinical suspicion for intrathoracic pathology.**

In the absence of cardiopulmonary symptoms, preoperative chest radiography rarely provides any meaningful changes in management or improved patient outcomes.

## How This List Was Created

The American College of Physicians (ACP) formed a workgroup of eleven experienced internal medicine physicians with specific skills in the assessment of evidence. Members of this workgroup included physicians who were current members of the ACP Clinical Guidelines Committee, the Education and Publication Committee, the Board of Governors and the Board of Regents, as well as three ACP staff physicians. The group collaboratively identified and narrowed down screening or diagnostic tests commonly used in clinical situations where they are unlikely to provide high value or improve patient outcomes. The results were further reviewed and narrowed by clinically active ACP staff physicians before being placed for review into a randomly selected internal medicine research panel. Representing 1 percent of ACP members, the panel selected five scenarios that represented the greatest potential for overuse or misuse of a diagnostic test leading to low value care. Based upon this process, the final top five scenarios were identified. ACP's disclosure and conflict of interest policy can be found at [www.acponline.org](http://www.acponline.org).

## Sources

- 1 2011 USPSTF screening for coronary heart disease with electrocardiography (draft) guideline; 2011 AAFP recommendations for preventive services guideline; 2010 ACCF/AHA assessment of cardiovascular risk in asymptomatic adults guideline.
- 2 2009 NICE low back pain guideline; 2008 ACR Appropriateness Criteria® low back pain guideline; 2007 ACP/APS low back pain guideline; 2007 ACOM low back disorders guideline.
- 3 2010 ACR-ASNR CT of the brain guideline; 2010 NICE transient loss of consciousness guideline; 2000 ECS syncope guideline.
- 4 2011 ACEP pulmonary embolism guideline; 2008 ESC pulmonary embolism guideline; 2007 AAFP/ACP venous thromboembolism guideline; 2010 SIGN venous thromboembolism guideline.
- 5 2008 ACR Appropriateness Criteria® for preoperative chest radiography guideline; ASPC patient safety advisory for pulmonary complications of surgery.

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### About the American College of Physicians:

The American College of Physicians (ACP) is the largest medical specialty organization and the second-largest physician group in the U.S. ACP's 132,000 members include internal medicine physicians (internists), subspecialists, and medical students. Internists specialize in the prevention, detection, and treatment of illness in adults. ACP's mission is to enhance the quality of health care by fostering excellence and professionalism in medicine. ACP provides information and advocacy for its members in internal medicine and related subspecialties.



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American College of Radiology



## Five Things Physicians and Patients Should Question

1

### Don't do imaging for uncomplicated headache.

Imaging headache patients absent specific risk factors for structural disease is not likely to change management or improve outcome. Those patients with a significant likelihood of structural disease requiring immediate attention are detected by clinical screens that have been validated in many settings. Many studies and clinical practice guidelines concur. Also, incidental findings lead to additional medical procedures and expense that do not improve patient well-being.

2

### Don't image for suspected pulmonary embolism (PE) without moderate or high pre-test probability.

While deep vein thrombosis (DVT) and PE are relatively common clinically, they are rare in the absence of elevated blood d-Dimer levels and certain specific risk factors. Imaging, particularly computed tomography (CT) pulmonary angiography, is a rapid, accurate and widely available test, but has limited value in patients who are very unlikely, based on serum and clinical criteria, to have significant value. Imaging is helpful to confirm or exclude PE only for such patients, not for patients with low pre-test probability of PE.

3

### Avoid admission or preoperative chest x-rays for ambulatory patients with unremarkable history and physical exam.

Performing routine admission or preoperative chest x-rays is not recommended for ambulatory patients without specific reasons suggested by the history and/or physical examination findings. Only 2 percent of such images lead to a change in management. Obtaining a chest radiograph is reasonable if acute cardiopulmonary disease is suspected or there is a history of chronic stable cardiopulmonary disease in a patient older than age 70 who has not had chest radiography within six months.

4

### Don't do computed tomography (CT) for the evaluation of suspected appendicitis in children until after ultrasound has been considered as an option.

Although CT is accurate in the evaluation of suspected appendicitis in the pediatric population, ultrasound is nearly as good in experienced hands. Since ultrasound will reduce radiation exposure, ultrasound is the preferred initial consideration for imaging examination in children. If the results of the ultrasound exam are equivocal, it may be followed by CT. This approach is cost-effective, reduces potential radiation risks and has excellent accuracy, with reported sensitivity and specificity of 94 percent.

5

### Don't recommend follow-up imaging for clinically inconsequential adnexal cysts.

Simple cysts and hemorrhagic cysts in women of reproductive age are almost always physiologic. Small simple cysts in postmenopausal women are common, and clinically inconsequential. Ovarian cancer, while typically cystic, does not arise from these benign-appearing cysts. After a good quality ultrasound in women of reproductive age, don't recommend follow-up for a classic corpus luteum or simple cyst <5 cm in greatest diameter. Use 1 cm as a threshold for simple cysts in postmenopausal women.

## How This List Was Created

The American College of Radiology (ACR) initially solicited expert opinion from physician leaders with its Board of Chancellors. A working group was then formed to further identify common clinical scenarios in which imaging may be misused and should be reconsidered. Members of the group included the physician chairs or vice chairs of seven ACR commissions such as Quality and Safety, Appropriateness Criteria and Metrics. An initial list of topics was narrowed down based on the highest potential for improvement, representing a broad range of tests and the availability of strong guidelines. Members then researched specific recommendations and evidentiary statements based on their expertise. Recommendations that were too general or were well covered by other existing measures and initiatives were eliminated to identify the final five things list. ACR's disclosure and conflict of interest policy can be found at [www.acr.org](http://www.acr.org).

## Sources

1. Jordan JE, Wippold FJ II, Cornelius RS, Amin-Hanjani S, Brunberg JA, Davis PC, De La Paz RL, Dormont D, Germano I, Gray L, Mukherji SJ, Seidenwurm DJ, Sloan MA, Turski PA, Zimmerman RD, Zipfel GJ, Expert Panel on Neurologic Imaging. ACR Appropriateness Criteria® headache. [online publication]. Reston (VA): American College of Radiology (ACR); 2009. 8 p. [http://www.acr.org/SecondaryMainMenuCategories/quality\\_safety/app\\_criteria/pdf/ExpertPanelonNeurologicImaging/HeadacheDoc6.aspx](http://www.acr.org/SecondaryMainMenuCategories/quality_safety/app_criteria/pdf/ExpertPanelonNeurologicImaging/HeadacheDoc6.aspx).  
Institute for Clinical Systems Improvement (ICSI). Diagnosis and treatment of headache. Bloomington (MN): Institute for Clinical Systems Improvement (ICSI); 2011 Jan. 84 p.  
Frishberg BM, Rosenberg JH, Matchar DB, et al. Evidence-Based Guidelines in the Primary Care Setting: Neuroimaging in Patients with Nonacute Headache. American Academy of Neurology. 2000. Available online: <http://www.aan.com/professionals/practice/pdfs/g10088.pdf> (US Headache Consortium).  
Stephen D. Silberstein. Practice parameter: Evidence-based guidelines for migraine headache (an evidence-based review): Report of the Quality, Standards Subcommittee of the American Academy of Neurology. 2000;55;754 Neurology. (US Headache Consortium).  
Edlow JA, Panagos PD, Godwin SA, Thomas TL, Decker WW; American College of Emergency Physicians. Clinical policy: critical issues in the evaluation and management of adult patients presenting to the emergency department with acute headache. Ann Emerg Med. 2008 Oct;52(4):407-36.
2. Torbicki A, Perrier A, Konstantinides S, et al. Guidelines on the diagnosis and management of acute pulmonary embolism: the Task Force for the Diagnosis and Management of Acute Pulmonary Embolism of the European Society of Cardiology (ESC). Eur Heart J. 2008; 29(18):2276-315.  
Neff MJ. ACEP releases clinical policy on evaluation and management of pulmonary embolism. American Family Physician 2003; 68 (4): 759–60.  
Stein PD, Woodard PK, Weg JG, Wakefield TW, Tapson VF, Sostman HD, Sos TA, Quinn DA, Leeper KV, Hull RD, Hales CA, Gottschalk A, Goodman LR, Fowler SE, Buckley JD. Diagnostic pathways in acute pulmonary embolism: recommendations of the PLOPED II Investigators. Radiology 2007; 242 (1): 15–21.
3. American College of Radiology. ACR Appropriateness Criteria: routine admission and preoperative chest radiography. [http://www.acr.org/SecondaryMainMenuCategories/quality\\_safety/app\\_criteria/pdf/ExpertPanelonThoracicImaging/RoutineAdmissionandPreoperativeChestRadiographyDoc6.aspx](http://www.acr.org/SecondaryMainMenuCategories/quality_safety/app_criteria/pdf/ExpertPanelonThoracicImaging/RoutineAdmissionandPreoperativeChestRadiographyDoc6.aspx).  
Gomez-Gil E, Trilla A, Corbella B, et al. Lack of clinical relevance of routine chest radiography in acute psychiatric admissions. Gen Hosp Psychiatry 2002; 24(2): 110-113.  
Archer C, Levy AR, McGregor M. Value of routine preoperative chest x-rays: a meta-analysis. Can J Anaesth 1993; 40(11): 1022-1027.  
Munro J, Booth A, Nicholl J. Routine preoperative testing: a systematic review of the evidence. Health Technol Assess 1997; 1(12):i-iv; 1-62.  
Grier DJ, Watson LF, Harnell GG, Wilde P. Are routine chest radiographs prior to angiography of any value? Clin Radiol 1993; 48(2):131-33.  
Gupta SD, Gibbins FJ, Sen I. Routine chest radiography in the elderly. Age Ageing. 1985; 14(1):11-14.  
American College of Radiology. ACR Appropriateness Criteria: routine chest radiographs in ICU patients [http://www.acr.org/SecondaryMainMenuCategories/quality\\_safety/app\\_criteria/pdf/ExpertPanelonThoracicImaging/RoutineChestRadiographDoc7.aspx](http://www.acr.org/SecondaryMainMenuCategories/quality_safety/app_criteria/pdf/ExpertPanelonThoracicImaging/RoutineChestRadiographDoc7.aspx).
4. Wan MJ, et al. Acute appendicitis in young children: cost-effectiveness of US versus CT in diagnosis-a Markov decision analytic model. Radiology 2009;250:378-86.  
Doria AS, et al. US or CT for diagnosis of appendicitis in children? A meta-analysis. Radiology 2006;241:83-94.  
Garcia K, et al. Suspected appendicitis in children: diagnostic importance of normal abdominopelvic CT findings with nonvisualized appendix. Radiology 2009;250:531-537.  
Krishnamoorthi R, et al. Effectiveness of a staged US and CT protocol for the diagnosis of pediatric appendicitis: reducing radiation exposure in the age of ALARA. Radiology 2011;259:231-239.  
American College of Radiology. ACR Appropriateness Criteria: right lower quadrant pain/suspected appendicitis. [http://www.acr.org/SecondaryMainMenuCategories/quality\\_safety/app\\_criteria/pdf/ExpertPanelonGastrointestinalImaging/RightLowerQuadrantPainDoc12.aspx](http://www.acr.org/SecondaryMainMenuCategories/quality_safety/app_criteria/pdf/ExpertPanelonGastrointestinalImaging/RightLowerQuadrantPainDoc12.aspx).  
Frush DP, Frush KS, Oldham KT. Imaging of acute appendicitis in children: EU versus U.S. or US versus CT? A North American perspective. Pediatr Radiol. 2009; 39(5):500-5.
5. Levine D, Brown DL, Andreotti RF. Management of asymptomatic ovarian and other adnexal cysts imaged at US: Society of Radiologists in Ultrasound Consensus Conference Statement. Radiology 2010 256:943-54.  
American College of Radiology. ACR Appropriateness Criteria: clinically suspected adnexal masses. [http://www.acr.org/SecondaryMainMenuCategories/quality\\_safety/app\\_criteria/pdf/ExpertPanelonWomensImaging/SuspectedAdnexalMassesDoc11.aspx](http://www.acr.org/SecondaryMainMenuCategories/quality_safety/app_criteria/pdf/ExpertPanelonWomensImaging/SuspectedAdnexalMassesDoc11.aspx).  
American College of Obstetricians and Gynecologists. ACOG Committee Opinion: number 280, December 2002. The role of the generalist obstetrician-gynecologist in the early detection of ovarian cancer. Obstet Gynecol 2002;100(6):1413–1416.  
American College of Obstetricians and Gynecologists. ACOG Practice Bulletin. Management of adnexal masses. Obstet Gynecol 2007;110(1):201–214.  
Timmerman D, Valentin L, Bourne TH, et al. Terms, definitions and measurements to describe the sonographic features of adnexal tumors: a consensus opinion from the International Ovarian Tumor Analysis (IOTA) Group. Ultrasound Obstet Gynecol 2000;16(5):500–505.

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### About the American College of Radiology:

The mission of the American College of Radiology (ACR) is to serve its 34,000 members in advancing the quality, safety, and science of radiology and radiation oncology. The ACR conducts cutting-edge clinical and socioeconomic research, establishes quality and safety standards and provides continuing education and advocacy for radiologists, radiation oncologists and medical physicists. Since 1923, the ACR has worked to keep medical imaging and radiation oncology safe, effective and accessible for all.



For more information or questions, please visit [www.acr.org](http://www.acr.org).

For more information or to see other lists of Five Things Physicians and Patients Should Question, visit [www.choosingwisely.org](http://www.choosingwisely.org).



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## American Gastroenterological Association



### Five Things Physicians and Patients Should Question

**1 For pharmacological treatment of patients with gastroesophageal reflux disease (GERD), long-term acid suppression therapy (proton pump inhibitors or histamine2 receptor antagonists) should be titrated to the lowest effective dose needed to achieve therapeutic goals.**

The main identifiable risk associated with reducing or discontinuing acid suppression therapy is an increased symptom burden. It follows that the decision regarding the need for (and dosage of) maintenance therapy is driven by the impact of those residual symptoms on the patient's quality of life rather than as a disease control measure.

**2 Do not repeat colorectal cancer screening (by any method) for 10 years after a high-quality colonoscopy is negative in average-risk individuals.**

A screening colonoscopy every 10 years is the recommended interval for adults without increased risk for colorectal cancer, beginning at age 50 years. Published studies indicate the risk of cancer is low for 10 years after a high-quality colonoscopy fails to detect neoplasia in this population. Therefore, following a high-quality colonoscopy with normal results the next interval for any colorectal screening should be 10 years following that normal colonoscopy.

**3 Do not repeat colonoscopy for at least five years for patients who have one or two small (< 1 cm) adenomatous polyps, without high-grade dysplasia, completely removed via a high-quality colonoscopy.**

The timing of a follow-up surveillance colonoscopy should be determined based on the results of a previous high-quality colonoscopy. Evidence-based (published) guidelines provide recommendations that patients with one or two small tubular adenomas with low grade dysplasia have surveillance colonoscopy five to 10 years after initial polypectomy. "The precise timing within this interval should be based on other clinical factors (such as prior colonoscopy findings, family history, and the preferences of the patient and judgment of the physician)."

**4 For a patient who is diagnosed with Barrett's esophagus, who has undergone a second endoscopy that confirms the absence of dysplasia on biopsy, a follow-up surveillance examination should not be performed in less than three years as per published guidelines.**

In patients with Barrett's esophagus without dysplasia (cellular changes) the risk of cancer is very low. In these patients, it is appropriate and safe to exam the esophagus and check for dysplasia no more often than every three years because if these cellular changes occur, they do so very slowly.

**5 For a patient with functional abdominal pain syndrome (as per ROME III criteria) computed tomography (CT) scans should not be repeated unless there is a major change in clinical findings or symptoms.**

There is a small, but measurable increase in one's cancer risk from x-ray exposure. An abdominal CT scan is one of the higher radiation exposure x-rays — equivalent to three years of natural background radiation. Due to this risk and the high costs of this procedure, CT scans should be performed only when they are likely to provide useful information that changes patient management.

## How This List Was Created

The American Gastroenterological Association (AGA) convened a work group that included members from the Clinical Practice and Quality Management Committee (CPQMC), chair of the Practice Management and Economics Committee (PMEC), the chief medical officer for the AGA Digestive Health Outcomes Registry® and members of the AGA Institute Governing Board. Ideas for the “five things” were solicited from the workgroup for review by the CPQMC, which developed additional topics, resulting in six draft items. The workgroup continued to pare down and refine the list, before submitting a final draft to both the CPQMC and the PMEC for approval. After final refinements were made to simplify language and avoid complex clinical terminology, the final list was submitted to and approved by the AGA Institute Governing Board. AGA’s disclosure and conflict of interest policy can be found at [www.gastro.org](http://www.gastro.org).

## Sources

- 1 American Gastroenterological Association Medical Position Statement on the Management of Gastroesophageal Reflux Disease. *Gastroenterology*, 2008.
- 2 Winawer S et. al. and US Multisociety Task Force on Colorectal Cancer. Colorectal Cancer Screening and Surveillance, Clinical Guidelines and Rationale—Update Based on New Evidence. *Gastroenterology*, 2003.  
Rex et. al. Quality indicators for colonoscopy. *Gastrointestinal Endoscopy*, 2006.
- 3 Levin B et. al. Screening and Surveillance for the Early Detection of Colorectal Cancer and Adenomatous Polyps, 2008: A Joint Guideline From the American Cancer Society, the US Multi-Society Task Force on Colorectal Cancer, and the American College of Radiology. *Gastroenterology*, 2008.  
Rex et. al. Quality indicators for colonoscopy. *Gastrointestinal Endoscopy*, 2006.
- 4 American Gastroenterological Association Medical Position Statement on the Management of Barrett’s Esophagus Gastroenterology.  
Wang KK, Sampliner RE and The Practice Parameters Committee of the American College of Gastroenterology. Updated Guidelines 2008 for the Diagnosis, Surveillance and Therapy of Barrett’s Esophagus, *Journal of Gastroenterology*, 2008.
- 5 Drossman DA, Corazziari E, Delvaux M, Spiller RC, Talley NJ, Thompson WG, et al. , eds. Rome III. *The Functional Gastrointestinal Disorders*, 2nd edn., 2006.  
Clouse, RE et al. Functional Abdominal Pain Syndrome. *Gastroenterology*, 2006.  
U.S. Food and Drug Administration. Reducing Radiation from Medical X-rays This article appears on FDA’s Consumer Updates page, which features the latest on all FDA-regulated products. Date Posted: February 19, 2009. Accessed at <http://www.fda.gov/ForConsumers/ConsumerUpdates/ucm095505.htm>.  
Image Wisely and US Food and Drug Administration. My Medical Imaging History. Access at [http://www.radiologyinfo.org/en/safety/ImageWisely/7678\\_Medical%20Imaging%20History.pdf](http://www.radiologyinfo.org/en/safety/ImageWisely/7678_Medical%20Imaging%20History.pdf).

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The American Gastroenterological Association (AGA) is the trusted voice of the GI community. Founded in 1897, AGA has grown to include 16,000 members from around the globe who are involved in all aspects of the science, practice and advancement of gastroenterology. The AGA Institute administers the practice, research and educational programs of the organization. Become an [AGA fan on Facebook](#). [Join our LinkedIn group](#). Follow us on Twitter [@AmerGastroAssn](#).



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## American Society of Clinical Oncology



American Society of Clinical Oncology

# Five Things Physicians and Patients Should Question

The American Society of Clinical Oncology (ASCO) is a medical professional oncology society committed to conquering cancer through research, education, prevention, and delivery of high-quality patient care. ASCO recognizes the importance of evidence-based cancer care and making wise choices in the diagnosis and management of patients with cancer. After careful consideration by experienced oncologists, ASCO highlights five categories of tests, procedures and/or treatments whose common use and clinical value are not supported by available evidence. These test and treatment options should not be administered unless the physician and patient have carefully considered if their use is appropriate in the individual case. As an example, when a patient is enrolled in a clinical trial, these tests, treatments, and procedures may be part of the trial protocol and therefore deemed necessary for the patient's participation in the trial.

### 1 Don't use cancer-directed therapy for solid tumor patients with the following characteristics: low performance status (3 or 4), no benefit from prior evidence-based interventions, not eligible for a clinical trial, and no strong evidence supporting the clinical value of further anti-cancer treatment.

- Studies show that cancer directed treatments are likely to be ineffective for solid tumor patients who meet the above stated criteria.
- Exceptions include patients with functional limitations due to other conditions resulting in a low performance status or those with disease characteristics (e.g., mutations) that suggest a high likelihood of response to therapy.
- Implementation of this approach should be accompanied with appropriate palliative and supportive care.

### 2 Don't perform PET, CT, and radionuclide bone scans in the staging of early prostate cancer at low risk for metastasis.

- Imaging with PET, CT, or radionuclide bone scans can be useful in the staging of specific cancer types. However, these tests are often used in the staging evaluation of low-risk cancers, despite a lack of evidence suggesting they improve detection of metastatic disease or survival.
- Evidence does not support the use of these scans for staging of newly diagnosed low grade carcinoma of the prostate (Stage T1c/T2a, prostate-specific antigen (PSA) <10 ng/ml, Gleason score less than or equal to 6) with low risk of distant metastasis.
- Unnecessary imaging can lead to harm through unnecessary invasive procedures, over-treatment, unnecessary radiation exposure, and misdiagnosis.

### 3 Don't perform PET, CT, and radionuclide bone scans in the staging of early breast cancer at low risk for metastasis.

- Imaging with PET, CT, or radionuclide bone scans can be useful in the staging of specific cancer types. However, these tests are often used in the staging evaluation of low-risk cancers, despite a lack of evidence suggesting they improve detection of metastatic disease or survival.
- In breast cancer, for example, there is a lack of evidence demonstrating a benefit for the use of PET, CT, or radionuclide bone scans in asymptomatic individuals with newly identified ductal carcinoma in situ (DCIS), or clinical stage I or II disease.
- Unnecessary imaging can lead to harm through unnecessary invasive procedures, over-treatment, unnecessary radiation exposure, and misdiagnosis.

### 4 Don't perform surveillance testing (biomarkers) or imaging (PET, CT, and radionuclide bone scans) for asymptomatic individuals who have been treated for breast cancer with curative intent.

- Surveillance testing with serum tumor markers or imaging has been shown to have clinical value for certain cancers (e.g., colorectal). However for breast cancer that has been treated with curative intent, several studies have shown there is no benefit from routine imaging or serial measurement of serum tumor markers in asymptomatic patients.
- False-positive tests can lead to harm through unnecessary invasive procedures, over-treatment, unnecessary radiation exposure, and misdiagnosis.

### 5 Don't use white cell stimulating factors for primary prevention of febrile neutropenia for patients with less than 20 percent risk for this complication.

- ASCO guidelines recommend using white cell stimulating factors when the risk of febrile neutropenia, secondary to a recommended chemotherapy regimen, is approximately 20 percent and equally effective treatment programs that do not require white cell stimulating factors are unavailable.
- Exceptions should be made when using regimens that have a lower chance of causing febrile neutropenia if it is determined that the patient is at high risk for this complication (due to age, medical history, or disease characteristics).

**Disclaimer:** These items are provided solely for informational purposes and are not intended to replace a medical professional's independent judgement or as a substitute for consultation with a medical professional. Patients with any specific questions about the items on this list or their individual situation should consult their health care provider. New evidence may emerge following the development of these items. ASCO is not responsible for any injury or damage arising out of or related to any use of these items or to any errors or omissions.



## Abbreviations

CT, computed tomography; DCIS, ductal carcinoma in situ; PET, positron emission tomography; PSA, prostate-specific antigen.

## How This List Was Created

The American Society of Clinical Oncology (ASCO) has had a standing Cost of Cancer Care Task Force since 2007. The role of the Task Force is to assess the magnitude of rising costs of cancer care and develop strategies to address these challenges. In response to the 2010 New England Journal of Medicine article by Howard Brody, MD, "Medicine's Ethical Responsibility for Health Care Reform – the Top Five List," a subcommittee of the Cost of Cancer Care Task Force began work to identify common practices in oncology that were both common as well as lacking sufficient evidence for widespread use. Upon joining the *Choosing Wisely* campaign, the members of the subcommittee conducted a literature search to ensure the proposed list of items were supported by available evidence in oncology; ultimately the proposed Top Five list was approved by the full Task Force. The initial draft list was then presented to the ASCO Clinical Practice Committee, a group composed of community-based oncologists as well as the presidents of the 48 state/regional oncology societies in the United States. Advocacy groups were also asked to weigh in to ensure the recommendations would achieve the dual purpose of increasing physician-patient communication and changing practice patterns. A plurality of more than 200 clinical oncologists reviewed, provided input and supported the list. The final Top Five list in oncology was then presented to, discussed and approved by the Executive Committee of the ASCO Board of Directors and published in the Journal of Clinical Oncology. ASCO's disclosure and conflict of interest policies can be found at [www.asco.org](http://www.asco.org).

## Sources

1. Azzoli CG, Temin S, Aliff T, et al: 2011 focused update of 2009 American Society of Oncology clinical practice guideline update on chemotherapy for stage IV non-small cell lung cancer. *J Clin Oncol* 29:3825-3831, 2011
- Ettinger DS, Akerley W, Bepler G, et al: Non-small cell lung cancer. *J Natl Compr Canc Netw* 8:740-801, 2010
- Carlson RW, Allred DC, Anderson BO, et al: Breast cancer. *J Natl Compr Canc Netw* 7:122-192, 2009
- Engstrom PF, Benson AB 3rd, Chen YJ, et al: Colon cancer clinical practice guidelines. *J Natl Compr Canc Netw* 3:468-491, 2005
- Smith TJ, Hillner BE: Bending the cost curve in cancer care. *N Engl J Med* 364:2060-2065, 2011
- Peppercorn JM, Smith TJ, Helft PR, et al: American Society of Clinical Oncology statement: Toward individualized care for patients with advanced cancer. *J Clin Oncol* 29:755-760, 2011
2. Makarov DV, Desai RA, Yu JB, et al: The population level prevalence and correlates of appropriate and inappropriate imaging to stage incident prostate cancer in the Medicare population. *J Urol* 187:97-102, 2012
- National Comprehensive Cancer Network: NCCN clinical practice guidelines in oncology (NCCN guidelines)-Prostate cancer. Version 4.2011
- Thompson I, Thrasher JB, Aus G, et al: Guideline for the management of clinically localized prostate cancer: 2007 update. *J Urol* 177:2106-2130, 2007
3. Carlson RW, Allred DC, Anderson BO, et al: Invasive breast cancer. *J Natl Compr Canc Netw* 9:136-222, 2011
4. Locker GY, Hamilton S, Harris J, et al: ASCO 2006 update of recommendations for the use of tumor markers in gastrointestinal cancer. *J Clin Oncol* 24:5313-5327, 2006
- Desch CE, Benson AB 3rd, Somerfield MR, et al: Colorectal cancer surveillance: 2005 update of an American Society of Clinical Oncology practice guideline. *J Clin Oncol* 23:8512-8519, 2005
- Carlson RW, Allred DC, Anderson BO, et al: Breast cancer. *J Natl Compr Canc Netw* 7:122-192, 2009
- Khatcheressian JL, Wolff AC, Smith TJ, et al: American Society of Clinical Oncology 2006 update of the breast cancer follow-up and management guideline in the adjuvant setting. *J Clin Oncol* 24: 5091-5097, 2006
- Harris L, Fritsche H, Mennel R, et al: American Society of Clinical Oncology 2007 update of recommendations for the use of tumor markers in breast cancer. *J Clin Oncol* 25:5287-5312, 2007
5. Smith TJ, Khatcheressian J, Lyman GH, et al: ASCO 2006 update of recommendations for the use of white blood cell growth factors: An evidence based clinical practice guideline. *J Clin Oncol* 24:3187-3205, 2006

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### About the American Society of Clinical Oncology:

The American Society of Clinical Oncology (ASCO) is the world's leading professional organization representing physicians who care for people with cancer. With more than 30,000 members, ASCO is committed to improving cancer care through scientific meetings, educational programs and peer-reviewed journals. ASCO is supported by its affiliate organization, the Conquer Cancer Foundation, which funds ground-breaking research and programs that make a tangible difference in the lives of people with cancer. ASCO's membership is comprised of clinical oncologists from all oncology disciplines and sub-specialties including medical oncology, therapeutic radiology, surgical oncology, pediatric oncology, gynecologic oncology, urologic oncology, and hematology; physicians and health care professionals participating in approved oncology training programs; oncology nurses; and other health care practitioners with a predominant interest in oncology.

For more information, please visit [www.asco.org](http://www.asco.org).







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American Society of Nephrology



## Five Things Physicians and Patients Should Question

1

### **Don't perform routine cancer screening for dialysis patients with limited life expectancies without signs or symptoms.**

Due to high mortality among end-stage renal disease (ESRD) patients, routine cancer screening—including mammography, colonoscopy, prostate-specific antigen (PSA) and Pap smears—in dialysis patients with limited life expectancy, such as those who are not transplant candidates, is not cost effective and does not improve survival. False-positive tests can cause harm: unnecessary procedures, overtreatment, misdiagnosis and increased stress. An individualized approach to cancer screening incorporating patients' cancer risk factors, expected survival and transplant status is required.

2

### **Don't administer erythropoiesis-stimulating agents (ESAs) to chronic kidney disease (CKD) patients with hemoglobin levels greater than or equal to 10 g/dL without symptoms of anemia.**

Administering ESAs to CKD patients with the goal of normalizing hemoglobin levels has no demonstrated survival or cardiovascular disease benefit, and may be harmful in comparison to a treatment regimen that delays ESA administration or sets relatively conservative targets (9–11 g/dL). ESAs should be prescribed to maintain hemoglobin at the lowest level that both minimizes transfusions and best meets individual patient needs.

3

### **Avoid nonsteroidal anti-inflammatory drugs (NSAIDs) in individuals with hypertension or heart failure or CKD of all causes, including diabetes.**

The use of NSAIDs, including cyclo-oxygenase type 2 (COX-2) inhibitors, for the pharmacological treatment of musculoskeletal pain can elevate blood pressure, make antihypertensive drugs less effective, cause fluid retention and worsen kidney function in these individuals. Other agents such as acetaminophen, tramadol or short-term use of narcotic analgesics may be safer than and as effective as NSAIDs.

4

### **Don't place peripherally inserted central catheters (PICC) in stage III–V CKD patients without consulting nephrology.**

Venous preservation is critical for stage III–V CKD patients. Arteriovenous fistulas (AVF) are the best hemodialysis access, with fewer complications and lower patient mortality, versus grafts or catheters. Excessive venous puncture damages veins, destroying potential AVF sites. PICC lines and subclavian vein puncture can cause venous thrombosis and central vein stenosis. Early nephrology consultation increases AVF use at hemodialysis initiation and may avoid unnecessary PICC lines or central/peripheral vein puncture.

5

### **Don't initiate chronic dialysis without ensuring a shared decision-making process between patients, their families, and their physicians.**

The decision to initiate chronic dialysis should be part of an individualized, shared decision-making process between patients, their families, and their physicians. This process includes eliciting individual patient goals and preferences and providing information on prognosis and expected benefits and harms of dialysis within the context of these goals and preferences. Limited observational data suggest that survival may not differ substantially for older adults with a high burden of comorbidity who initiate chronic dialysis versus those managed conservatively.

## How This List Was Created

The American Society of Nephrology (ASN) maintains a Quality and Patient Safety (QPS) Task Force that advances ASN's commitment to providing high-quality care to patients and to raising awareness of patient safety issues for all professionals administering care to kidney patients. Each of ASN's 10 advisory groups contributes expertise to the task force to ensure it addresses all areas of nephrology practice, and the society's president, public policy board and council also provide insights. The QPS task force centered its focus on five items most likely to positively impact and influence optimal patient care. The final list of five items was unanimously approved by the ASN public policy board and council. ASN's disclosure and conflict of interest policy can be found at [www.asn-online.org](http://www.asn-online.org).

## Sources

- 1 U.S. Renal Data System, American Society of Nephrology, American Society of Transplantation, *Archives of Internal Medicine*, *Seminars in Dialysis*.
- 2 U.S. Food and Drug Administration, *The New England Journal of Medicine* (multiple publications).
- 3 National Kidney Foundation Kidney Disease Outcomes Quality Initiative (KDOQI) *Clinical Practice Guidelines for Chronic Kidney Disease; Chronic Kidney Disease in Adults: UK Guidelines for Identification, Management and Referral*; American Heart Association; *Seventh Report of the Joint National Committee on Prevention, Detection, Evaluation, and Treatment of High Blood Pressure*; *Scottish Intercollegiate Guidelines Network on Management of Chronic Heart Failure*.
- 4 *Fistula First Breakthrough Initiative – National Coalition Recommendation for the Minimal Use of PICC Lines*, American Society of Diagnostic and interventional Nephrology; *Guidelines for Venous Access in Patients with Chronic Kidney Disease*, *Seminars in Dialysis*, National Kidney Foundation *Clinical Practice Guidelines for Vascular Access*, *The Renal Network, Inc. PICC Line Resource Toolkit*, *Clinical and Experimental Nephrology*.
- 5 Renal Physicians' Association End-of-Life Care Guidelines, *Pediatric Nephrology*, *Clinical Journal of the American Society of Nephrology*, *Journal of Pediatrics*, *Nephrology Dialysis Transplantation*, *Archives of Internal Medicine*, *Nephrology Dialysis and Transplant*, *New England Journal of Medicine*, *Palliative Medicine*.

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### About the American Society of Nephrology:

The American Society of Nephrology (ASN) represents nearly 14,000 professionals committed to curing kidney disease. The *Choosing Wisely* campaign reflects ASN's commitment to the highest quality care for the millions of kidney patients worldwide. ASN provides the most highly regarded education in kidney medicine, supports key kidney research, and advocates daily for policies that improve patients' lives and equip professionals to help those with kidney disease achieve the highest quality of life.



For more information or questions, please visit [www.asn-online.org](http://www.asn-online.org).

For more information or to see other lists of Five Things Physicians and Patients Should Question, visit [www.choosingwisely.org](http://www.choosingwisely.org).



*An initiative of the ABIM Foundation*

## American Society of Nuclear Cardiology



### Five Things Physicians and Patients Should Question

1

#### **Don't perform stress cardiac imaging or coronary angiography in patients without cardiac symptoms unless high-risk markers are present.**

Asymptomatic, low-risk patients account for up to 45 percent of inappropriate stress testing. Testing should be performed only when the following findings are present: diabetes in patients older than 40 years old, peripheral arterial disease, and greater than 2 percent yearly coronary heart disease event rate.

2

#### **Don't perform cardiac imaging for patients who are at low risk.**

Chest pain patients at low risk of cardiac death and myocardial infarction (based on history, physical exam, electrocardiograms and cardiac biomarkers) do not merit stress radionuclide myocardial perfusion imaging or stress echocardiography as an initial testing strategy if they have a normal electrocardiogram (without baseline ST-abnormalities, left ventricular hypertrophy, pre-excitation, bundle branch block, intra-ventricular conduction delay, paced rhythm or on digoxin therapy) and are able to exercise.

3

#### **Don't perform radionuclide imaging as part of routine follow-up in asymptomatic patients.**

Performing stress radionuclide imaging in patients without symptoms on a serial or scheduled pattern (e.g., every one to two years or at a heart procedure anniversary) rarely results in any meaningful change in patient management. This practice may lead to unnecessary invasive procedures and excess radiation exposure without any proven impact on patients' outcomes. An exception to this rule would be for patients more than five years after a bypass operation.

4

#### **Don't perform cardiac imaging as a pre-operative assessment in patients scheduled to undergo low- or intermediate-risk non-cardiac surgery.**

Non-invasive testing is not useful for patients undergoing low-risk non-cardiac surgery or with no cardiac symptoms or clinical risk factors undergoing intermediate-risk non-cardiac surgery. These types of testing do not change the patient's clinical management or outcomes and will result in increased costs. Therefore, it is not appropriate to perform cardiac imaging procedures for non-cardiac surgery risk assessment in patients with no cardiac symptoms, clinical risk factors or who have moderate to good functional capacity.

5

#### **Use methods to reduce radiation exposure in cardiac imaging, whenever possible, including not performing such tests when limited benefits are likely.**

The key step to reduce or eliminate radiation exposure is appropriate selection of any test or procedure for a specific person, in keeping with medical society recommendations, such as appropriate use criteria. Health care providers should incorporate new methodologies in cardiac imaging to reduce patient exposure to radiation while maintaining high-quality test results.

## How This List Was Created

The American Society of Nuclear Cardiology (ASNC) appointed a writing group of content experts to identify five areas in which to make recommendations. Areas were selected for the evidence-based data available to direct provider decision-making and the potential for improving patient selection and care by eliminating inappropriate testing. Specific recommendations were drafted for each subject area, accompanied by peer-reviewed literature citations. These recommendations were reviewed by the ASNC Quality Assurance Committee and Board of Directors prior to submission to the *Choosing Wisely* campaign. ASNC's disclosure and conflict of interest policy can be found at [www.asnc.org](http://www.asnc.org).

## Sources

1. Hendel RC, Berman DS, Di Carli MF, Heidenreich PA, Henkin RE, Pelliikka PA, Pohost GM, Williams KA. ACCF/ASNC/ACR/AHA/ASE/SCCT/SCMR/SNM 2009 appropriate use criteria for cardiac radionuclide imaging: a report of the American College of Cardiology Foundation Appropriate Use Criteria Task Force, the American Society of Nuclear Cardiology, the American College of Radiology, the American Heart Association, the American Society of Echocardiography, the Society of Cardiovascular Computed Tomography, the Society for Cardiovascular Magnetic Resonance, and the Society of Nuclear Medicine. *J Am Coll Cardiol* 2009;53:2201-29.
2. Hendel RC, Abbott BG, Bateman TM, et al. Role of radionuclide myocardial perfusion imaging for asymptomatic individuals. *J Nucl Cardiol*. 2011;18:3-15.
3. Hendel RC, Berman DS, Di Carli MF, Heidenreich PA, Henkin RE, Pelliikka PA, Pohost GM, Williams KA. ACCF/ASNC/ACR/AHA/ASE/SCCT/SCMR/SNM 2009 appropriate use criteria for cardiac radionuclide imaging: a report of the American College of Cardiology Foundation Appropriate Use Criteria Task Force, the American Society of Nuclear Cardiology, the American College of Radiology, the American Heart Association, the American Society of Echocardiography, the Society of Cardiovascular Computed Tomography, the Society for Cardiovascular Magnetic Resonance, and the Society of Nuclear Medicine. *J Am Coll Cardiol* 2009;53:2201-29.
4. Taylor AJ, Cerqueira M, Hodgson JM, Mark D, Min J, O'Gara P, Rubin GD. ACCF/SCCT/ACR/AHA/ASE/ASNC/SCAI/SCMR 2010 appropriate use criteria for cardiac computed tomography: a report of the American College of Cardiology Foundation Appropriate Use Criteria Task Force, the Society of Cardiovascular Computed Tomography, the American College of Radiology, the American Heart Association, the American Society of Echocardiography, the American Society of Nuclear Cardiology, the Society for Cardiovascular Angiography and Interventions, and the Society for Cardiovascular Magnetic Resonance. *J Am Coll Cardiol* 2010;56:1864-94.
5. Anderson JL, Adams CD, Antman EM, Bridges CR, Califf RM, Casey DE Jr, Chavey WE II, Fesmire FM, Hochman JS, Levin TN, Lincoff AM, Peterson ED, Theroux P, Wenger NK, Wright RS. ACC/AHA 2007 guidelines for the management of patients with unstable angina/non-ST-elevation myocardial infarction: a report of the American College of Cardiology/American Heart Association Task Force on Practice Guidelines (Writing Committee to Revise the 2002 Guidelines for the Management of Patients with Unstable Angina/Non-ST-Elevation Myocardial Infarction): developed in collaboration with the American College of Emergency Physicians, American College of Physicians, Society for Academic Emergency Medicine, Society for Cardiovascular Angiography and Interventions, and Society of Thoracic Surgeons. *J Am Coll Cardiol* 2007;50:e1-157.
6. Hendel RC, Berman DS, Di Carli MF, Heidenreich PA, Henkin RE, Pelliikka PA, Pohost GM, Williams KA. ACCF/ASNC/ACR/AHA/ASE/SCCT/SCMR/SNM 2009 appropriate use criteria for cardiac radionuclide imaging: a report of the American College of Cardiology Foundation Appropriate Use Criteria Task Force, the American Society of Nuclear Cardiology, the American College of Radiology, the American Heart Association, the American Society of Echocardiography, the Society of Cardiovascular Computed Tomography, the Society for Cardiovascular Magnetic Resonance, and the Society of Nuclear Medicine. *J Am Coll Cardiol* 2009;53:2201-29.
7. Hendel RC, Berman DS, Di Carli MF, Heidenreich PA, Henkin RE, Pelliikka PA, Pohost GM, Williams KA. ACCF/ASNC/ACR/AHA/ASE/SCCT/SCMR/SNM 2009 appropriate use criteria for cardiac radionuclide imaging: a report of the American College of Cardiology Foundation Appropriate Use Criteria Task Force, the American Society of Nuclear Cardiology, the American College of Radiology, the American Heart Association, the American Society of Echocardiography, the Society of Cardiovascular Computed Tomography, the Society for Cardiovascular Magnetic Resonance, and the Society of Nuclear Medicine. *J Am Coll Cardiol* 2009;53:2201-29.
8. Fleisher LA, Beckman JA, Brown KA, Calkins H, Chaikof EL, Fleischmann KE, Freeman WK, Froehlich JB, Kasper EK, Kersten JR, Riegel B, Robb JF. ACC/AHA 2007 guidelines on perioperative cardiovascular evaluation and care for noncardiac surgery: a report of the American College of Cardiology/American Heart Association Task force on Practice Guidelines (Writing Committee to Revise the 2002 Guidelines on Perioperative Cardiovascular Evaluation for Noncardiac Surgery). *J Am Coll Cardiol* 2007;50:e159-242.
9. Hendel RC, Berman DS, Di Carli MF, Heidenreich PA, Henkin RE, Pelliikka PA, Pohost GM, Williams KA. ACCF/ASNC/ACR/AHA/ASE/SCCT/SCMR/SNM 2009 appropriate use criteria for cardiac radionuclide imaging: a report of the American College of Cardiology Foundation Appropriate Use Criteria Task Force, the American Society of Nuclear Cardiology, the American College of Radiology, the American Heart Association, the American Society of Echocardiography, the Society of Cardiovascular Computed Tomography, the Society for Cardiovascular Magnetic Resonance, and the Society of Nuclear Medicine. *J Am Coll Cardiol* 2009;53:2201-29.
10. Taylor AJ, Cerqueira M, Hodgson JM, Mark D, Min J, O'Gara P, Rubin GD. ACCF/SCCT/ACR/AHA/ASE/ASNC/SCAI/SCMR 2010 appropriate use criteria for cardiac computed tomography: a report of the American College of Cardiology Foundation Appropriate Use Criteria Task Force, the Society of Cardiovascular Computed Tomography, the American College of Radiology, the American Heart Association, the American Society of Echocardiography, the American Society of Nuclear Cardiology, the Society for Cardiovascular Angiography and Interventions, and the Society for Cardiovascular Magnetic Resonance. *J Am Coll Cardiol* 2010;56:1864-94.
11. Cerqueira MD, Allman KC, Ficaro EP, Hansen CL, Nichols KJ, Thompson RC, Van Decker WA, Yakovlevitch M. ASNC information statement: Recommendations for reducing radiation exposure in myocardial perfusion imaging. *J Nucl Cardiol* 2010;17:709-18.
12. Douglas PS, Carr JJ, Cerqueira MD, Cummings JE, Gerber TC, Mukherjee D, Taylor AJ. Developing an action plan for patient radiation safety in adult cardiovascular medicine: proceedings from the Duke University Clinical Research Institute/American College of Cardiology Foundation/American Heart Association Think Tank held on February 28, 2011. *J Am Coll Cardiol* 2012;59:In Press. (Published online March 22, 2012.)

### About the ABIM Foundation:

The mission of the ABIM Foundation is to advance medical professionalism to improve the health care system. We achieve this by collaborating with physicians and physician leaders, medical trainees, health care delivery systems, payers, policymakers, consumer organizations and patients to foster a shared understanding of professionalism and how they can adopt the tenets of professionalism in practice.



To learn more about the ABIM Foundation, visit [www.abimfoundation.org](http://www.abimfoundation.org).

### About the American Society of Nuclear Cardiology:

The American Society of Nuclear Cardiology (ASNC) is the voice of more than 4,500 physicians, technologists and scientists dedicated to the science and practice of nuclear cardiology. Since 1993, ASNC has been establishing the standard for excellence in cardiovascular imaging through the development of clinical guidelines, professional education and research development.



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